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| 10/735,595 | 12/12/2003 | Raymond C. Kurzweil | 14202-005001 | 1751 |
| 26161 | 7590 | 06/22/2007 | | |
| FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022 | | | EXAMINER DUFFY, DAVID W | |
| | | | ART UNIT 3714 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/735,595 | Applicant(s) KURZWEIL, RAYMOND C. | |
| | Examiner David W. Duffy | Art Unit 3714 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 May 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because the content of figure 1 does not match the written description. Specifically, the elements 20a, 24a and 26a are described as being on user 22a but are on robot 12a in the drawings. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "12b" has been used to designate both a mannequin and a robot. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in

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reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "104" has been used to designate both tactile sensors and a glove. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The abstract of the disclosure is objected to because the invention title should not be on the page. Correction is required. See MPEP § 608.01(b).

5. The disclosure is objected to because of the following informalities: Pg 9, line 2: "noise" should be "nose".

Appropriate correction is required.

Claim Objections

6. Claim 3 is objected to because of the following informalities: the claim recites the limitation "a humanoid robot" which is identical to parent claim 2. It is unclear if claim 3 is intended to include another robot or refer to the previously disclosed robot. Examiner is interpreting the robots to be the same. Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 12, 14, 18 and 20-23 rejected under 35 U.S.C. 103(a) as being unpatentable over Choy et al. (US 6695770) in view of Yee et al. (US 6016385).

9. In regards to claims 1 and 14, Choy discloses a virtual reality encounter system comprising: a mannequin coupled to a computer system wherein the mannequin is fitted with appropriate sensors that are connected to the computer system to transmit to another location and user device over a network (3:23-25), a headset, to display morphing animations and animated textures on the appropriate avatar (9:65-10:6) and a processor that overlays a virtual environment over one or more portions of the video

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image to form a virtual scene (8:47-58 and 9:65-10:6). Choy seems to lack explicitly stating the use of a camera coupled to the mannequin.

10. In related prior art, Yee discloses a robot system wherein an operator controls the robot and receives sensory information from the robot, including a pair of cameras corresponding to the remote user's eyes coupled to the robot for receiving a video image where the cameras send the video images via a communication network to the user (5:11-37). One skilled in the art would recognize the advantages of providing video signals to a remote user.

11. Therefore it would have been obvious to one skilled in the art at the time to combine the camera configuration of Yee with the two person configuration of Choy to provide a more realistic experience to both users.

12. In regards to claims 12 and 22, Choy discloses a headset that communicates through a wireless link inherently including a receiver (3:41-46).

13. In regards to claims 18, 20, 21 and 23 Choy discloses that the robot has life-like features, the robot comprising: a body (fig 2). Choy further discloses that the system employs a headset with stereo audio and a wireless connection (3:41-46). Choy seems to lack disclosing a microphone attached to the robot located in ear canals or cameras located in eye sockets.

14. In related prior art, Yee discloses teaches a robot having life-like features including a body (fig 3), and a microphone coupled to the body, wherein the body includes an ear canal and the microphone is positioned within the ear canal (4:52-5:1) and the body includes an eye socket and the camera is positioned in the eye socket

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(5:11-37) and the command and sense signals between the robot and the user may be over wireless connection (9:9-11). One skilled in the art would recognize the advantages of replicating human perception for a remote controlled robot.

15. Therefore it would have been obvious to one skilled in the art at the time to combine the virtual reality system of Choy with the teachings of Yee because as Yee suggests, the virtual interface of the robot, camera in eye socket and microphone in ears, is intended to make the robot more friendly in appearance to a second user, and the microphones in the ears add the benefit of being able to relay to the user a sense of direction of a sound and the cameras in the left and right eye sockets provide the user with information in a three dimensional format similar to how a human would normally view an environment (4:52-5:49).

16. Claims 2-6, 10, 11, 13 and 15-17 rejected under 35 U.S.C. 103(a) as being unpatentable over Choy in view of Yee as applied to claim 1 above, and further in view of Dundon (US 7046151).

17. In regards to claims 2 and 15, Choy discloses wherein the mannequin is a humanoid robot having tactile sensors positioned along the exterior of the robot (2:4-32), the sensors sending tactile signals to a communications network (8:9-15). Choy further discloses wherein the user wears a body suit, but seems to lack explicitly disclosing that the suit comprises tactile actuators.

18. In related prior art, Dundon discloses an interactive body suit that permits users to interact over a network whereby the garment includes tactile actuators, the tactile

actuators receiving tactile signals from the network (abstract). One skilled in the art would recognize the advantages of recreating tactile feelings.

19. Therefore it would have been obvious to one skilled in the art at the time to combine the body suit of Dundon with the system of Choy because, as Dundon suggests (29:36-55), an interactive body suit that covers a user with embedded oscillating motors provides a more realistic and interactive sensory environment when providing force feedback sense of touch.

20. In regards to claims 3 and 16, Choy discloses motion sensors positioned throughout the body suit (5:46-67), the motion sensors sending motion signals corresponding to movements of each sensor relative to a reference point 0, the motion signals transmitted to the communications network (5:46-67); and a humanoid robot, receiving, from the communications network, the motion signals from the motion sensors (9:65-10:32), the motion signals from the motion sensors causing a movement of the robot that is correlated to a movement of the body suit (3:11-25, 6:1-49 and 7:20-23).

21. In regards to claims 4 and 17, Choy discloses that the robot includes motion actuators corresponding to the motion sensors, the motion actuators causing the robot to move (7:20-23 and 8:1-15).

22. In regards to claims 5, 6, 10, 11 and 13 Choy discloses that the robot has life-like features, the robot comprising: a body (fig 2). Choy further discloses that the system employs a headset with stereo audio and a wireless connection (3:41-46). Choy seems

to lack disclosing a microphone attached to the robot located in ear canals or cameras located in eye sockets.

23. In related prior art, Yee discloses teaches a robot having life-like features including a body (fig 3), and a microphone coupled to the body, wherein the body includes an ear canal and the microphone is positioned within the ear canal (4:52-5:1) and the body includes an eye socket and the camera is positioned in the eye socket (5:11-37) and the command and sense signals between the robot and the user may be over wireless connection (9:9-11). One skilled in the art would recognize the advantages of replicating human perception for a remote controlled robot.

24. Therefore it would have been obvious to one skilled in the art at the time to combine the virtual reality system of Choy with the teachings of Yee because as Yee suggests, the virtual interface of the robot, camera in eye socket and microphone in ears, is intended to make the robot more friendly in appearance to a second user, and the microphones in the ears add the benefit of being able to relay to the user a sense of direction of a sound and the cameras in the left and right eye sockets provide the user with information in a three dimensional format similar to how a human would normally view an environment (4:52-5:49).

25. Claims 7, 8, 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Choy in view of Yee and Dundon as applied to claim 6 above, and further in view of Abbasi (US 6786863).

26. In regards to claims 7 and 9, Choy in view of Yee discloses a robot at a first location and a set of goggles at a second location (Choy: 9:65-11:17); a second

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humanoid robot in the second location having life-like features and rendering acquired video and audio signals received from a communications network into a user headset (Choy: 9:65-11:17). Choy further discloses sending audio and visual signals to the headset of the user (fig 1 and 3:10-4:55). The combination seems to lack explicitly disclosing sending audio and video signals from a second microphone and camera coupled to a second robot.

27. In related prior art, Abbasi discloses a remote physical encounter system and method comprising a second mechanical surrogate with external sensory devices including a second camera and a second microphone and sending the signals to a communications network (fig 1) wherein the communications network comprises an interface having one or more channels for receiving the audio signals from the microphone and receiving the video signals from the camera (fig 1). One skilled in the art would recognize the advantages of including a microphone and camera when two people are interacting remotely.

28. Therefore it would have been obvious to one skilled in the art at the time to combine the system of Choy with the teachings of Abbasi because the use of sight and sound is important for easy communication and as Choy suggests, the combination of touch, audio and visual stimulation is a powerful and effective means of communication (1:19-22).

29. In regards to claim 8, Choy discloses the communications network includes a first communication gateway in the first location and a second communication gateway in

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the second location (9:65-10:6), the second processor connected to the first processor via a network (7:64-8:38 and 11:1-12).

30. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Choy in view of Yee as applied to claim 18 above, and further in view of Abbasi.

31. Choy in view of Yee discloses a robot at a first location and a set of goggles at a second location (Choy: 9:65-11:17); a second humanoid robot in the second location having life-like features and rendering acquired video and audio signals received from a communications network into a user headset (Choy: 9:65-11:17). Choy further discloses sending audio and visual signals to the headset of the user (fig 1 and 3:10-4:55). The combination seems to lack explicitly disclosing sending audio and video signals from a second microphone and camera coupled to a second robot.

32. In related prior art, Abbasi discloses a remote physical encounter system and method comprising a second mechanical surrogate with external sensory devices including a second camera and a second microphone and sending the signals to a communications network (fig 1) wherein the communications network comprises an interface having one or more channels for receiving the audio signals from the microphone and receiving the video signals from the camera (fig 1). One skilled in the art would recognize the advantages of including a microphone and camera when two people are interacting remotely.

33. Therefore it would have been obvious to one skilled in the art at the time to combine the system of Choy with the teachings of Abbasi because the use of sight and sound is important for easy communication and as Choy suggests, the combination of

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touch, audio and visual stimulation is a powerful and effective means of communication (1:19-22).

Conclusion

Applicant is duly reminded that a complete response must satisfy the requirements of 37 C.F. R. 1.111, including: "The reply must present arguments pointing out the specific distinctions believed to render the claims, including any newly presented claims, patentable over any applied references. A general allegation that the claims "define a patentable invention" without specifically pointing out how the language of the claims patentably distinguishes them from the references does not comply with the requirements of this section. Moreover, "The prompt development of a clear Issue requires that the replies of the applicant meet the objections to and rejections of the claims." Applicant should also specifically point out the support for any amendments made to the disclosure. See MPEP 2163.06 II(A), MPEP 2163.06 and MPEP 714.02. The "disclosure" includes the claims, the specification and the drawings.

Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

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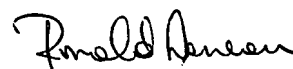
Any inquiry concerning this communication or earlier communications from the examiner should be directed to David W. Duffy whose telephone number is (571) 272-1574. The examiner can normally be reached on M-F 0800-1630.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert E. Pezzuto can be reached on (571) 272-6996. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DWD




RONALD LANEAU
PRIMARY EXAMINER

6/21/07